

0108-354 US-1
Amendment dated 02/28/2008

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Reply to office action mailed 10/31/2007

REMARKS

Claims 1-15 are currently pending in the application. By this amendment, claim 1 is amended for the Examiner's consideration. The foregoing separate sheets marked as "Listing of Claims" show all the claims in the application, with an indication of the current status of each.

The Examiner's withdrawal of the prior rejection mailed 8/21/2007 is acknowledged with appreciation.

The Examiner maintains a non-statutory double patenting rejection of claims 1-5, 7, and 11-15 based upon another application of the applicant (published as U.S. Patent Publication No. 2005/0039762 and now issued as U.S. Patent No. 7,172,567). It is respectfully requested that the Examiner consider the following argument against this ground of rejection, but in the event that the Examiner is not persuaded a terminal disclaimer overcoming this ground of rejection is attached to this response.

The '567 patent deals with a command signal, e.g. for unlocking a latched joint. This signal may be transmitted wirelessly from the hand grip of the walking aid if the hand grip is provided with a corresponding signal transmitter. The unlocking of a latched joint may be initiated by the command signal. This is what is claimed by the granted patent.

According to the present invention it may be detected if the unlocking of the joint initiated by the command signal has successfully been completed. For this there is a detection means, as the claims have been amended to make explicit. If the unlocking has been completed there may be a corresponding signal for the user of the orthopedic aid. However, it is more likely according to the present invention to detect the locking state, so that the joint may be loaded with the weight of the user's body during walking.

There is no enabling expression in the '567 patent of the functionality disclosed in the present invention, namely, alerting the user. Note that in claims 6, 7, 9 and 10 of the '567 there is no reference to a user. Further, it will be observed that

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the independent claim of the present invention makes no reliance upon or limitation of the means which may be taken by the user to lock or unlock the orthopedic aid or respond to the notice provided. By contrast, the independent claim of the '567 patent contains as a limitation a control unit that electromechanically actuates the locking device to the locked or the unlocked position. The circumstance of reliance upon this electromechanical mechanism means that any visual display, acoustic signal or vibration (as described in claims 6, 7, 9 and 10) will simply confirm the control objective (locking or unlocking) already initiated at the actuating unit. By contrast, the disclosure of the present invention describes a need to alert a user, e.g. to failure of the orthotic joint to reach the locked position (page 1, lines 35-36). Neither this disclosure nor the corresponding claim limitation are present in the '567 patent.

Thus, it is respectfully submitted that neither of the Examiner's assertions in support of a double patenting rejection is correct: the subject matter claimed in the instant application is not fully disclosed in the co-pending application (now the '567 patent), and the present claims would not properly be presentable and supported in the co-pending application (now the '567 patent). Furthermore, in response to the Examiner's comments, the claims in the two applications do not include the same structural elements, as indicated above.

It is therefore believed that the double patenting ground of rejection is overcome.

The Examiner has rejected claims 1-5, 7 and 11 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 6,184,797 to Stark et al. ("Stark"). In prior office actions the Stark reference had been cited secondarily to the now removed Brown reference. Stark discloses a system for remotely monitoring the parameters of orthopedic restraining devices such as casts or braces, without an indication of relevance to locking of an artificial joint. The Stark device does not contain an artificial joint which can be locked or unlocked. Consequently, no signal for a lock state (i.e. latched state) or the unlocking of the joint is produced. The Stark device uses an "incrementally adjustable hinge" (20a,b at col. 17, lines 63; 21a,b at col. 20,

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lines 24-25) which allows the two parts of the device to pivot with respect to one another (col. 20, lines 66-67). This pivoting motion is limited by a brake and clutch mechanism (col. 21, line 7).

Note that the use of an orthopedic aid of the present invention is not during any walking gait, but instead for initiating walking (locked state) and sitting (unlocked state), for example. Therefore, there is a user initiated switching between the locked state and the unlocked state. For the locked state the user will walk with a stiff leg if the joint of the present invention is a knee joint. If after walking the user would like to sit down, it would be highly inconvenient to maintain the latched position of the knee joint which would cause the user to sit with a stiff leg. Therefore, the knee joint is then unlocked so that the user may sit down with the normal bent knee joint. After standing up and before restarting walking the user has to bring the joint into an extended position so as to block the joint (under the force of gravity or a corresponding spring). The user will then start walking again.

The present invention starts from the idea to give the user a signal confirming the locking state of the joint so that he can be sure that the joint is in the locked state when he starts loading the joint with his weight.

The Examiner's argument that the claims read on the disclosure of Stark may be summarized in the following table:

Claim 1	Stark
An orthopedic aid with two parts (15, 16) which are movable relative to one another	Fig. 12 shows members 6aa'' and 6ab'' moveable relative to one another. [This element is not in dispute]

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and with a locking device for locking the two parts (15, 16) in a predetermined relative position and for unlocking the parts (15, 16) in order to permit movement of the parts (15, 16) with respect to one another,	Locking device 21a has a brake which can be set and released. [No showing of a “predetermined relative position” for locking; Stark’s device is “incrementally adjustable”.]
wherein a signaling arrangement (36, 40, 41, 42) is provided which emits a particular indicator signal or warning signal,	Signaling arrangement (76, 77, 78 in Fig. 15 showing control unit 10" in Fig. 11); display, vibrator and piezo alarm signals.
responsive to means for detecting the locking or unlocking of the device,	Examiner’s position: because the detecting means (Fig. 15) detects all the parameters of the device <u>including the state of the locking device 21a</u> it would be <u>able</u> to detect the state of the lock. [There is provision for locking and releasing the lock, but no indication (because no need) for a signal directed to confirming that the device has been locked or that the lock has been released.]
for alerting a user of the orthopedic aid to a locking state or upon unlocking of the locking device.	Examiner’s position: the device would be “fully capable” of emitting a signal upon unlocking. [“Capability” is not the same as actual disclosure, absent hindsight.]

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The weaknesses of the Examiner's §102 rejection may be understood from the above table. First, Stark fails to disclose a "predetermined relative position" for locking. In the invention there is one such position whereas in Stark the device may be locked in any position. In the invention "predetermined" refers to the design of the device as an aid providing a supporting function for compensating a permanent or temporary weakness of the human body (see ¶0002 in the publication of the invention in US 2004/0225242). "This is achieved by the orthopedic aid providing a supporting function in which, in a defined position of the parts of the aid these parts are locked with respect to one another, and the locked position of the two parts with respect to one another corresponds to a position of use in which the patient concerned requires the supporting function afforded by the orthopedic aid" (¶0002). Thus the focus of the invention is on a defined position of the parts, where the supporting function is implemented by a load placed on the aid. It is this position that is served by the locking device. The claims have been amended to emphasize these aspects of the invention which connect the locking device to the "predetermined relative position" which establishes the position of load bearing use through which the aid accomplishes its supporting function. By contrast Stark discloses an exercising apparatus which is for isokinetic exercise of the muscles of a leg, in which exercise can be performed for different fixed angles of the knee joint. The fixed angle of this orthosis-like apparatus can be adjusted manually (see Figs. 3 to 10) or electromagnetically (embodiment of Figs. 11 to 14).

It is therefore submitted that the foregoing amendment distinguishes the Stark reference.

Second, Stark fails to disclose sensors for detecting the locking or unlocking of the device. The invention's supporting function requires a load bearing use of the aid implemented by locking the two parts in a corresponding "predetermined relative position." The locking device accomplishes the locking, but the load bearing use makes critical the correct locking of the device, as would be understood by those skilled in the art. Similarly, when the user of the aid wishes to adopt another

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position, where the two parts are allowed to move flexibly, it is important to confirm that the device has been unlocked. The invention handles the important objective of correct locking and unlocking of the orthopedic aid by providing means for detecting the locking or unlocking of the device. Furthermore, these means are not simply capabilities in the abstract. The detecting means trigger a signaling arrangement directed toward alerting the user to the locked or unlocked state of the device, where the locked state enables support of the load bearing use at the “predetermined relative position” of the two parts. These claim elements work together in a coordinated fashion to implement the invention.

Stark does not disclose the claimed relationship between claim elements. Instead, Stark discloses a device used in a controlled exercise program that relies upon the capability of the device to incrementally adjust the angle between the two parts. The respective angle can be sensed electrically by a sensor arrangement which includes the usual potentiometer for angle measurement. But there is no sensor for the locked or unlocked position and there is no signal indicative of, and responsive to, the locked or unlocked status of the device. Even if it were possible – as the Examiner suggests – to modify Stark to create a “means for detecting the locking or unlocking of the device” from the measurements available at the control unit, there is no reason in Stark why it would be important or even useful to trigger a warning signal alerting the user to the change of state. Moreover, however, “all the parameters of the device” does not disclose an ability to detect the state of the lock. Nor is there a need to do so.

The user in Stark is concerned with physical therapy through an exercise program, and takes advantage of the incrementally adjustable brake and clutch device to move through the exercise program at different angles. By contrast, the user of the present invention is using the orthopedic aid to provide compensatory load bearing support. Whereas the user of the present invention is highly motivated to be sure that the device is locked before placing a load upon it, no such motivation applies to the user of the Stark device. In Stark there is no particular angle between the two parts

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where locking of the device is more important than at other angles, so as to justify a special alert to the user. The graphic liquid crystal display 76 and the piezo audio alarm 78 of Fig. 15 are not intended or even suited for giving a warning signal with respect to the locked or unlocked state of the apparatus because the apparatus has no sensor for the locked or unlocked state. The only sensors disclosed in Stark are the angle sensor (a potentiometer) and strain gauges which measure the force exerted during the exercise program on the apparatus. Alarms are initiated when time has elapsed to summon the user to begin an exercise (col. 24, lines 45-52).

For the foregoing reasons, and in view of the above amendments to the claims, it is believed that Stark is overcome as a reference with respect to independent claim 1.

The Examiner has rejected claims 6 and 8-9 under 35 U.S.C. §103(a) as being unpatentable over Stark in view of U.S. Patent 7,235,058 to Doty. Claim 10 is rejected under 35 U.S.C. §103(a) as being unpatentable over Stark in view of U.S. Patent Application Publication No. 2002/0183673 to Naft et al. ("Naft"). Claims 12-15 are rejected under 35 U.S.C. §103(a) as being unpatentable over Stark. Since these claims depend from claims now believed to be allowable, these additional grounds of rejection are also overcome.

In view of the foregoing, it is requested that the application be reconsidered, that claims 1-15 be allowed, and that the application be passed to issue.

Should the Examiner find the application to be other than in condition for allowance, the Examiner is requested to contact the undersigned at 703-787-9400 (fax: 703-787-7557; email: clyde@wcc-ip.com) to discuss any other changes deemed necessary in a telephonic or personal interview.

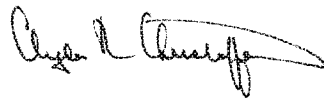
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If a further extension of time is required for this response to be considered as being timely filed, a conditional petition is hereby made for such extension of time. Please charge any deficiencies in fees and credit any overpayment of fees to Attorney's Deposit Account No. 50-2041.

Sincerely,

A handwritten signature in black ink, appearing to read "Clyde R. Christofferson", with a long, sweeping horizontal stroke extending to the right.

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